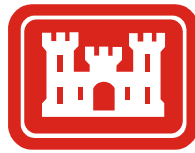


**ENVIRONMENTAL ASSESSMENT
INSTALLATION INTEGRATED PEST MANAGEMNT PLAN
RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS**



Prepared for

US Army Materiel Command

by

**US Army Corps of Engineers
Fort Worth District**

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**ENVIRONMENTAL ASSESSMENT
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RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS**

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FINDING OF NO SIGNIFICANT IMPACT

PROPOSED IMPLEMENTATION OF AN INSTALLATION INTEGRATED PEST MANAGEMNT PLAN RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS

Description of Action. The Red River Army Depot (RRAD), located approximately 18 miles west of Texarkana, Texas, proposes to implement an Installation Integrated Pest Management Plan (IIPMP) for the period 2002-2003. The proposed action would serve as an instrument to accomplish the Army's mission of managing installation pest concerns, mitigating pest effects of the overall military mission, and complying with various environmental laws. The proposed IIPMP would use an integrated pest management approach that implements mechanical, physical, biological, and chemical controls to manage pest species on RRAD. Pests that interfere with public health, destroy structural property, or interfere with the missions of RRAD would be given the highest management priority. The proposed IIPMP would also incorporate continuous monitoring, education, record keeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, material, or the environment.

Anticipated Environmental Effects. Alternatives considered include the proposed action, exchange action, and no action plans as described in the environmental assessment (EA). The proposed implementation of the IIPMP would have positive benefits toward management of pest concerns at RRAD by providing a variety of strategies that maintain pest populations below economically damaging levels while minimizing harmful effects of pest control on human health and environmental resources. The exchange action alternative would be identical to the proposed plan, but would utilize alternative pest control measures and approved chemicals that are not currently identified in the IIPMP. The alternative pest control measures would provide the same or improved level of protection to the environment, manage target pest species at an acceptable level, and decrease unacceptable damage to people, property, and the mission operations of RRAD. The no action approach would place the installation in a non-compliance status with Army Regulation 200-5, national policies, and DOD Instruction 4150.7, and as such, is not a viable alternative.

There will be no adverse impacts on the human and natural environment associated with proper implementation of the proposed and exchange actions. No significant adverse environmental impacts are anticipated for geology and soils, water resources, biological resources, or historic resources. Minor impacts to non-target plant and wildlife species could occur due to unforeseen conditions and occurrences. No adverse impact is expected to occur to any plant or animal species that are proposed or listed as threatened or endangered according to the Endangered Species Act. All actions and activities addressed in the IIPMP will be conducted in accordance with applicable state and federal environmental laws and applied in accordance with labeled directions and instructions.

Facts and Conclusions. Based on a review of the information contained in this EA, it is concluded that the implementation of the RRAD IIPMP is not a major Federal action, which would significantly affect the quality of the human environment within the meaning of Section

102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an Environmental Impact Statement (EIS) for this proposed action is not warranted. The proposed implementation of the IIPMP is considered to be environmentally sound, and the issuance of a Finding of No Significant Impact (FONSI) by the U.S. Army Material Command is recommended.

Deadline and Point of Contact. Public comments and requests for further information regarding this preliminary decision not to prepare an EIS and issue a FONSI may be submitted to U.S. Army Material Command, Pest Management Coordinator, Red River Army Depot, Building 286, Texarkana, Texas 75507. All comments will be taken into consideration. This preliminary decision and the FONSI will become final after the 30-day comment period expires if no new information is provided to alter this finding. No administrative action will be taken on this decision during the 30-day comment period. Copies of the EA and requests for review of the IIPMP may be requested in writing at the above address, or by telephone at (903) 334-2361.

Fred L. Hart, Jr.
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ENVIRONMENTAL ASSESSMENT INSTALLATION INTEGRATED PEST MANAGEMENT PLAN RED RIVER ARMY DEPOT, BOWIE COUNTY, TEXAS

1.0 INTRODUCTION

This Environmental Assessment (EA) analyzes the potential impacts of implementation of the November 2000 revision of the Installation Integrated Pest Management Plan (IIPMP) at the Red River Army Depot (RRAD). RRAD is located in northeast Texas, in Bowie County, approximately 18 miles west of Texarkana, Texas. The 18,446-acre installation is responsible for distribution, maintenance, and storage of general supplies and ammunition, vehicle rebuild and modification, aircraft armament system overhaul, and the missile system maintenance mission of the Army Materiel Command.

1.1 PURPOSE AND NEED

The IIPMP would be implemented to prevent or manage pests that interfere with the supply, maintenance, and ammunition missions of RRAD, adversely affect health, or damage property, structures, or material. The pest management program at RRAD is responsible for minimizing structural damage due to pests at over 1,000 buildings. The plan controls vegetation growth on 702 ammunition igloos, 200 miles of fence, 57 miles of railroad track, and two water supply reservoirs covering an area of approximately 380 acres. The IIPMP is also intended to control health hazard pests at industrial sites, recreation facilities, military quarters, and food handling facilities. The current IIPMP uses an integrated pest management approach that implements mechanical, physical, biological, and chemical controls to manage pests on RRAD. An integrated pest management program is defined in Army Regulation (AR) 200-5, Environmental Quality/Pest Management, as:

“A planned program, incorporating continuous monitoring, education, record keeping, and communication to prevent pests and disease vectors from causing unacceptable damage to operations, people, property, material, or the environment. The integrated pest management strategy uses targeted, sustainable, economical, environmentally sound methods including education, habitat modification, biological control, genetic control, cultural control, mechanical control, physical control, regulatory control, and where necessary, the judicious use of the least hazardous pesticides”.

The purpose of this EA is to identify and evaluate the environmental aspects of implementing the proposed plan in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) Regulations, and Army Regulation 200-2, Environmental Effects of Army Actions.

The objective of NEPA is to ensure consideration of the environmental aspects of proposed actions in the Federal decision-making processes and to make environmental information available to the public before decisions are made and actions taken.

Army Regulation 200-2 establishes policy, procedures, and responsibilities for assessing environmental effects of Army actions. Army Regulation 200-2 specifically states that implementation of a pesticide, fungicide, herbicide, insecticide, and rodenticide-use program requires preparation of an EA.

1.2 SCOPE

The proposed action is the implementation of the IIPMP for RRAD. Various alternatives, including the No Action Alternative and various components of the IIPMP were examined in this EA.

1.3 IMPACT ANALYSIS

The analysis process involved the review of past and current installation data collected by a variety of governmental agencies and private organizations. The comprehensive document describing the pest control program at RRAD was reviewed and an on-site inspection was conducted to assess typical pest management locations and procedures. The process also involved interviews with RRAD personnel involved with pest management, environmental planning, and land management.

2.0 DESCRIPTION OF THE IIPMP

The November 2000 revision of the RRAD IIPMP was developed using the latest Department of Defense (DOD) and Army Regulations. A copy of the IIPMP is included as Appendix A of this EA. Army Regulation 200-5 coordinates Department of the Army Pest Management Program policies with legal compliance requirements, national policies, DOD Instruction 4150.7, and military missions. Individual pest management procedures are integrated with no inconsistencies.

The IIPMP provides a guide to establish and maintain safe, efficient, and environmentally sound integrated pest management procedures. The plan briefly describes the climate, management areas, and impacted facilities of RRAD as they relate to pest management. The pest management program at RRAD includes a variety of pests that are managed based on a priority scale. Pests that interfere with public health, destroy structural property, or interfere with the missions of RRAD are given the highest priority. The procedures and methods for chemical and non-chemical control of various pest species are discussed in Section IV of the IIPMP. Safety procedures and precautions to be used during application of pesticides are discussed in this section.

Section V of the IIPMP describes administrative duties for RRAD pest control personnel. Typical duties include: determining future expenditures and needs based on past records, using contractors for selected pest management work, maintaining a daily activity logbook and historical data base, and attending training/re-certification courses. A description of the pest control facility and emergency/safety equipment is also included in this section.

Section VI of the IIPMP includes information regarding health and safety monitoring for pest control employees. A list of personnel protective equipment available to each employee is also described in this section. Copies of material safety data sheets (MSDS) are maintained in the pest management facility and are readily available to all employees. Additional copies of MSDS sheets are forwarded to selected health, fire, and environmental agencies in case of an emergency.

Sections VII through X describe pesticide use regulations and environmental considerations for implementation of the IIPMP on RRAD. Implementation is controlled in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act. All chemicals are handled, stored, and applied in accordance with labeled instructions. Excess or unused pesticides are disposed of in accordance with property disposal regulations after the Army Environmental Center Senior Pest Management Consultant is contacted for possible redistribution.

The IIPMP describes and implements an integrated approach to managing pest species on RRAD for the period of 2002 to 2003. The IIPMP is updated on an annual basis and changes are coordinated with the AMC Pest Management Coordinator (AMCPMC) and Senior Pest Management Consultant, Army Environmental Center (AEC). The IIPMP is comprehensive and should be referred to for specific information regarding pest concerns and individual pesticide application procedures at RRAD (Appendix A). The IIPMP with a complete list of associated appendixes is on file at the pest control facility, Red River Army Depot, building 286, Texarkana, Texas 75561.

3.0 DESCRIPTION OF ALTERNATIVES

3.1 PROPOSED ACTION

The proposed action alternative is to implement the IIPMP at RRAD. The IIPMP presents detailed information on individual pest species that will be managed at RRAD. The plan describes the setting, determines the priority of pest control work, and determines how individual pest species will be managed. Where possible, a combination of education, habitat modification, biological control, mechanical control, physical control, chemical control, and regulatory control would be used to manage pest species on an individual basis. Integrated pest management at RRAD would also incorporate training, record keeping, monitoring, and communication to ensure that environmentally sound methods of management are used to prevent pests and disease vectors from causing unacceptable damage to people, property, structures, mission operations, and the environment. Overall, the proposed action would provide a proactive approach to existing and future pest management concerns at RRAD.

3.2 EXCHANGE ACTION

The exchange action alternative would result in full implementation of the IIPMP at RRAD. This alternative would be identical to the proposed action alternative in all aspects, but would utilize alternative pest control measures and approved chemicals that are not currently identified in the IIPMP. The alternative pest control methods and chemicals would be used in exchange for those already in the IIPMP. Pest control measures that provide the same or improved level of

protection to the environment, manage the target pest specie at an acceptable level, and do not create unacceptable damage to people, property, and the mission operations of RRAD would be considered appropriate for exchange with currently listed IIPMP pest control measures. Under these guidelines, the exchange action alternative would have the same results as the proposed action alternative. Therefore, the proposed and exchange action alternatives will be used synonymously when considering the affected environment and environmental consequences in this EA.

3.3 NO ACTION

The no action alternative would result in not implementing the IIPMP or other integrated pest management programs at RRAD. Rather, portions of the IIPMP would be implemented by emphasizing site-specific reaction to pest problems. There is a wide range of options involved with this alternative including implementation of some management measures but not others. Likewise, there is a wide range of different combinations of management measures that could be used with one another depending on the scenario and the intended result. Such actions would emphasize reacting to identified problems and noncompliance as opposed to the proactive approach of the total IIPMP. Overall, the alternative plan would use a reactive approach to solve existing pest management concerns, rather than a proactive approach as described in the IIPMP that would deal with current and future management concerns.

4.0 AFFECTED ENVIRONMENT

4.1 SETTING

This section describes the existing environment and resources that could affect or be affected by the proposed action or its alternatives. The RRAD is located in the northeast corner of Texas in central Bowie County. The RRAD shares a common border with the government-owned and contractor-operated Lone Star Army Ammunition Plant (LSAAP), which is located adjacent to and east of RRAD. Three principal highways, Interstate 30, U.S. Highway 67, and U.S. Highway 82 provide access to RRAD. The installation is within 200 miles of Dallas and Fort Worth, Texas; Shreveport, Louisiana; Little Rock, Arkansas; and Oklahoma City, Oklahoma.

RRAD encompasses 18,446 acres of land that contains mostly semi-improved acreage in pine and hardwood forests. Improved areas include approximately 1,400 buildings consisting of ammunition igloos, standard magazines, warehouses, administrative offices, a supply-training center, a light track overhaul facility, a central distribution center, and demolition facilities (Tetra Tech 1997). Two man-made lakes, Caney Creek Reservoir and Elliot Creek Reservoir, are located within RRAD and supply installation drinking water. RRAD also has two active and two inactive small arms firing ranges.

4.1.1 History and Mission

RRAD was established in 1941 through the acquisition of farmland and residential areas to create an ammunition storage facility. Most of the land at RRAD is currently used for ammunition storage and associated quantity-distance (QD) safety zones. As part of the U.S.

Army Industrial Operations Command, RRAD has also been a major depot-level support facility for maintenance, repair, and overhaul of major weapon systems and components. The RRAD has been the Center of Technical Excellence for overhaul of light and medium weapon systems including the Bradley Fighting Vehicle Series, Multiple Rocket Launcher System, Fire Support Team Vehicle, M9 Armored Combat Earthmover, and M113 Armored Personnel Carrier family of vehicles (Tetra Tech 1997). The installation has also stored, shipped, and maintained conventional ammunition and various types of missiles. Tenant organizations that have used RRAD's facilities include the Defense Distribution Depot Red River, U.S. Material Command School of Engineering and Logistics, Defense Finance and Accounting Service, and Defense Reutilization and Marketing Office (Tetra Tech 1997).

4.1.2 Climate

The climate of the region is transitional between the subtropical climate prevalent farther south and the continental climate of the Great Plains and Midwest (Tetra Tech 1997). The winter months are normally mild with freezing temperatures on an average of 35 days a year. Snowfall is rare and averages only 1 to 2 inches per year. The growing season averages 245 days with drought conditions occurring frequently in the summer and fall seasons. The average annual rainfall is approximately 44.2 inches. Prevailing winds are out of the south during all months except September, when winds from the east prevail.

4.2 GEOLOGY AND SOILS

Red River Army Depot is located in the West Gulf Coastal Plain section of the United States Coastal Plain Physiographic Province (Tetra Tech 1997). Formations within the Gulf Coastal Plain thin landward and form belts parallel to the Gulf Coast. Resistant formations leave ridges within the province and easily eroded formations leave valleys. The installation is located on flat to slightly rolling terrain with an elevation varying from 270 feet above mean sea level (amsl) to 410 feet amsl (Tetra Tech 1997).

There are four to six major soil series that occur on RRAD. The dominant soils on the installation include the Sawyer silt loam, Annona loam, Adaton-Muskogee complex, and Sardis silt loam (Tetra Tech 1997). The Sawyer series consists of deep, loamy soils that formed in loamy and clayey sediments on uplands with slopes from 0 to 3 percent. The Annona series consists of about 12 inches of loamy soil that overlies clay subsoil that extends to a depth of 80 inches or more. The Adaton-Muskogee complex soils occur on uplands with mounds that have slopes ranging from 0 to 2 percent. The nearly level soils of the Sardis series occur on floodplains along the major creeks and drainage ways on slopes that are less than 1 percent (Tetra Tech 1997).

Red River Army Depot is underlain almost entirely by soils with moderate to severe limitations for building development. Limitations in the form of wetness and shrink-swell characteristics occur as a result of the clay content in many of the soils. The soils that underlie the majority of developed areas at RRAD have severe limitations for site development due to slow permeability, corrosiveness, low strength, and shrink-swell characteristics (Tetra Tech 1997).

4.3 WATER RESOURCES

Most of the surface water coverage on RRAD is included in two reservoirs, Caney Creek Reservoir and Elliott Creek Reservoir. Both reservoirs are located in the southeastern area of RRAD and are stocked with a variety of fish species. Caney Creek Reservoir was built in 1941 and is used as the primary source of potable water for RRAD and LSAAP. The reservoir has an average depth of 7.3 feet and a maximum storage capacity of 1,340 acre-feet (Tetra Tech 1997). Elliott Creek Reservoir was built in 1942 and is used primarily for outdoor recreation and as an alternate raw water supply. The reservoir has a maximum storage capacity of 1,930 acre-feet and has an average depth of 8.7 feet (Tetra Tech 1997).

The primary drainage features at RRAD include Big Creek, Rock Creek, Caney Creek, and Panther Creek. There is a central ridge that extends across Bowie County from east to west. Drainage to the north of the divide flows into the Red River and drainage to the south flows into the Sulfur River. Groundwater flow on RRAD is generally in the same direction as the surface water. The depth to groundwater is usually shallow and ranges from near the surface along creek bottoms to 30 to 40 feet along ridges.

The U.S. Department of the Interior conducted a wetland inventory of RRAD during 1997 and 1998, which identified approximately 3,700 acres of wetlands and deepwater habitats on RRAD and LSAAP. Wetlands occurring on RRAD consist of forested, scrub/emergent, and scrub habitat types. Deciduous forested wetlands are the most common habitat type on RRAD (Tetra Tech 2000).

4.4 BIOLOGICAL RESOURCES

4.4.1 Plants

RRAD is located within an oak-pine, broadleaf, deciduous, and needle green-evergreen forest. Three forest associations commonly occur in the wooded areas of RRAD: loblolly-short-leaved pine, pine-hardwood, and mixed hardwood. The dominant climax species found in the over story on RRAD include red maple (*Acer rubrum*), black hickory (*Carya texana*), southern hackberry (*Celtis sp.*), persimmon (*Diospyros virginiana*), sweetgum (*Liquidambar styraciflua*), short-leaved pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), southern red oak (*Quercus falcata*), and post oak (*Quercus stellata*) (Tetra Tech 2000).

Shrub species commonly found on RRAD include American beauty berry (*Callicarpa americana*), hawthorne (*Crataegus brainerdii*), sumac (*Rhus sp.*), blackberry (*Rubus sp.*), and tree huckleberry (*Gaylussacia sp.*) (Tetra Tech 2000).

Grass species common to RRAD include longleaf uniola (*Uniola sp.*), purple top (*Tridens flavus*), little bluestem (*Andropogon scoparius*), and broomsedge (*Andropogon virginicus*) (Tetra Tech 2000).

4.4.2 Animals

Common mammals identified on RRAD include the white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), skunk (*Spilogale sp.* and *Mephitis sp.*), and armadillo (*Dasypus novemcinctus*) (Tetra Tech 2000).

A variety of migratory and non-migratory bird species have seasonal residence at RRAD. Species that have been identified on RRAD include the mourning dove (*Zenaida macroura*), wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), eastern bluebird (*Sialia sialis*), green heron (*Butorides virescens*), and numerous migratory waterfowl (Tetra Tech 2000).

Common reptiles and amphibians located on RRAD include the copperhead snake (*Agkistrodon sp.*), diamondback rattlesnake (*Crotalus sp.*), box turtle (*Terrapene sp.*), snapping turtle (*Chelydra sp.* and *Macrolemys sp.*), Texas salamander (*Eurycea neotenes*), siren (*Pseudobranchius sp.*), great plains narrow-mouthed toad (*Gastrophryne olivacea*), and bullfrog (*Rana catesbeiana*) (Tetra Tech 2000).

Some of the fish species that occur within the reservoirs, streams, and ponds at RRAD include the largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), spotted sucker (*Minytrema melanops*), and red-eared sunfish (*Lepomis microlophus*) (Tetra Tech 2000).

4.4.3 Threatened and Endangered Species

No federal or state listed plant species are known to occur on RRAD. The only state rare plant identified for Bowie County is the Arkansas meadow rue (*Thalictrum arkansanum*) (Tetra Tech 2000).

The only federally listed fauna known to occur on RRAD is the American alligator (*Alligator mississippiensis*). The American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), interior least tern (*Sterna antillarum*), arctic peregrine falcon (*Falco peregrinus tundruis*), red-cockaded woodpecker (*Picoides borealis*), and Louisiana black bear (*Ursus americanus*) are federally listed species that might occur at RRAD. However, these species are not likely to establish permanent residence due to the lack of known quality habitat at the installation (Tetra Tech 2000).

4.5 HISTORIC RESOURCES

Four cultural resource management plans have been completed (Woodward-Clyde Consultants 1984, Geo-Marine, Inc. 1991, ACE 1994, 1998) at RRAD. No architectural properties are listed on or nominated for inclusion in the National Register of Historic Places (NRHP) on RRAD. Since 1980, eight archaeological studies have been conducted at RRAD and a total of 128 sites have been recorded. Forty of the archaeological sites require protection from disturbances until an eligibility status can be determined. Approximately 350 acres of RRAD

have not been surveyed for archaeological properties (Tetra Tech 2000).

All IIPMP projects requiring the movement of earth would be subject to NEPA review and documentation as well as coordination with the State Historic Preservation Office (SHPO) whenever required. This would preclude negative impacts to any known or unknown historic resources.

4.6 HAZARDOUS MATERIALS

The RRAD pest management program currently has two certified pest applicators. Certified pest applicators are required to attend a re-certification course once every three years at Fort Sam Houston School of Medical Science, San Antonio, Texas. When available, pest control personnel also attend additional workshops and conferences that provide new pest management information and technology. The DOD has a memorandum of understanding with the Texas Department of Agriculture, which allows DOD certified personnel to acquire, purchase, and supervise the application of restricted use and/or state limited use pesticides in the state of Texas on land that is owned by the United States Government. Pest management personnel at RRAD determine the quantity of pesticides to be purchased based on past usage and surveillance of problem pest management areas. A current list of pesticides, chemicals, and equipment used by the RRAD pest management program is listed in the IIPMP (Appendix A).

The pest control facility is located in building 286 at RRAD. The building consists of an office, restroom, changing room, chemical mixing room, and chemical storage/shop area. A slab with three-inch curbing, designed to contain chemical spills, surrounds the chemical storage/shop area. Pesticides and hazardous chemicals are stored on stainless steel shelving with four-foot access aisles. The chemical storage/shop area contains an eye lavage, shower, and ventilator in case of emergencies. The mixing room contains three chemical mixing sinks that are equipped with shut-off valves to prevent accidental spills from entering the sewer system. An updated spill contingency plan is listed in Appendix J of the IIPMP and is also on file in building 286 of the RRAD. A diagram of the pest control facility and its location on an Installation Map are available in Appendix G and H of the IIPMP.

All daily activities of the pest control personnel, pesticide application information, and location of applications are entered and recorded into a database. The database also contains an inventory of all chemicals and pesticides stored at the pest control facility. Copies of MSDS for all chemicals are located at the pest control facility and are readily available to all RRAD personnel. Standard personal protective equipment and emergency spill kits are also available to all pest control personnel.

5.0 ENVIRONMENTAL CONSEQUENCES

As discussed in Section 3.0 of this document, three alternative actions were considered to determine environmental consequences and feasibility:

- 3.1) The proposed action alternative with full implementation of the IIPMP.
- 3.2) The exchange action alternative with full implementation of the IIPMP.

3.3) The no action alternative without full implementation of the IIPMP.

The IIPMP provides guidelines for preventing or managing pest species encountered at RRAD and is not a military operations plan. The IIPMP is a course of action designed to maintain or improve the management of pest concerns at RRAD. The IIPMP allows flexibility in management options, as more information becomes available based on ongoing and planned studies. All methods of pest management in the IIPMP comply with Federal, State, and local regulations, including management plans for invasive pest species, noxious weeds, and disease vectors. The IIPMP provides provisions for compliance with the Federal Insecticide, Fungicide and Rodenticide Act, Worker Protection Standard (WPS), and Interim Endangered Species Protection Program as required for chemical controls.

None of the alternatives would have significant negative environmental consequences, but the alternatives differ significantly in their ability to proactively manage pest concerns, mitigate environmental damage due to the Army mission, and comply with environmental laws. Without the IIPMP, existing pest management measures would not be utilized and unacceptable damage to people, property, structures, mission operations, and the environment could occur. Also, the no action approach would place the installation in a non-compliance status with Army Regulation 200-5, national policies, and DOD Instruction 4150.7.

5.1 GEOLOGY AND SOILS

Soil properties affecting the movement of pesticides include soil texture, soil permeability, and organic matter content. The relative proportions of sand, silt, and clay in the soil determine soil texture. Texture affects movement of water through soil and, therefore, affects the movement of dissolved chemicals, such as pesticides. The coarser the soil, the faster the movement of the percolating water and the less opportunity for adsorption of dissolved chemicals. Soils with more clay and organic matter tend to hold water and dissolved chemicals longer. These soils also have far more surface area on which pesticides can be adsorbed. Soils with coarse texture will normally allow pesticides to reach the groundwater faster than soils with fine texture.

Soil permeability is a measure of how fast water can move downward through a particular soil. Water moves quickly through soils with high permeability. They also lose dissolved chemicals with the percolating water. In highly permeable soils, therefore, the timing and methods of pesticide application need to be carefully designed to minimize losses through leaching.

Soil organic matter influences how much water a soil can hold and how well it will be able to adsorb pesticides. Increasing the soil's organic content, through practices such as application of manure or plowing under of cover crops, increases the soil's ability to hold both water and dissolved pesticides in the root zone where they will be available to plants and to eventual degradation.

5.1.1 Proposed Action

The proposed action would have minor consequences to geology and soil resources at RRAD. The application of pesticides in areas with high erosion and disturbance potential would be avoided to reduce the movement of treated soil from the application use sites. Special attention to pesticide label instructions is required to limit pesticide residues in soil that may impact non-target plants, animals, and humans. Increased pesticide residues in the soil could occur on RRAD at locations that routinely receive pesticide applications such as the igloo mounds, which are highly inaccessible to other non-chemical control measures such as mowing and burning. However, when possible, non-chemical control measures such as grazing, burning, and mowing should be implemented to reduce possible soil contamination from pesticide applications.

5.1.2 No Action

The no action alternative offers a less comprehensive program for the control and management of pest concerns at RRAD. Partial implementation of the IIPMP would reduce the planning capabilities of the program and would not allow as much flexibility in choosing the most appropriate management option or combination of options that are suitable for the desired objective. Consequently, negative soil impacts would likely be greater while positive benefits of pest control would likely be less than under the proposed action.

5.2 WATER RESOURCES

The shallower the depth to groundwater, the less soil there will be to act as a filter. Also, there will be fewer opportunities for degradation or adsorption of pesticides. Therefore, extra precautions need to be taken to protect groundwater in areas where it is close to the ground surface. In humid regions, groundwater may be only a few feet below the surface of the soil. If rainfall is high and soils are permeable, water carrying dissolved pesticides may take only a few days to percolate downward to groundwater.

Another factor determining leaching potential is the way in which a pesticide is applied. Injection or incorporation into the soil makes the pesticide readily available for leaching. Most of the pesticides, which have been detected in groundwater, are ones that are incorporated into the soil rather than sprayed directly onto vegetation. The rate and timing of a pesticide's application are also critical in determining whether it will leach to groundwater or be removed with surface runoff. The larger the amount used and the closer the time of application to a time of heavy rainfall or irrigation, the more likely that some pesticides will leach to groundwater or wash away with surface runoff. Areas with high rates of rainfall or irrigation may have large amounts of water percolating through the soil and, therefore, are highly susceptible to removal of pesticides, especially if the soils have high permeability or erosion potentials.

5.2.1 Proposed Action

The proposed action would have minor impacts on water resources at RRAD. The application of pesticides near water resources would be avoided to prevent ground and surface

water contamination. The use of filter strips and conservation buffers is warranted near water resources to decrease the movement of pesticides into water resources. Application method, weather conditions, and timing are other important criteria to consider for reduction of surface and ground water contamination. The proposed action includes an integrated program for the control of pest concerns at RRAD. Brief periods of increased water contamination are possible due to unforeseen weather and environmental conditions. However, the implementation of biological, cultural, and mechanical management measures will reduce damages that may be incurred to surface or ground waters due to the Army mission.

5.2.2 No Action

The no action alternative offers a less comprehensive program for the control and management of pest concerns at RRAD. Existing management activities would continue, but would not be supplemented by the management strategies proposed in the IIPMP. Partial implementation of the IIPMP would reduce the planning capabilities of the program and would not allow as much flexibility in choosing the most appropriate management option or combination of options that are suitable for the desired objective. Consequently, negative impacts to water resources would likely be greater than under the proposed action. Conversely, the positive benefits of pest control would likely be less than under the proposed action.

5.3 BIOLOGICAL RESOURCES

Special care should be used when applying pesticides near sensitive areas such as wetlands, riparian corridors, and human habitation. If possible, alternative methods of pest control should be used in these areas. The proposed plan should pay special attention to pesticide label instructions and climatic conditions to help prevent misdirected pest management control measures that negatively impact non-target plant and animal species. Likewise, extreme care should be used when applying baited pest controls, which could have high negative impacts if consumed or contacted by non-target species. Monitoring of a wide variety of plants and animals near application areas would help reduce physical damage to non-target organisms and increase restoration opportunities of damaged areas.

5.3.1 Proposed Action

The proposed action would provide the opportunity to manage both plant and animal pest species at RRAD on an integrated basis. Areas of special biological significance associated with pest management include protection of native flora and fauna resources and reduction of negative impacts to these resources, including humans. The proposed IIPMP would provide site-specific protection of biological resources by implementing the least invasive form of pest control as well as implement overall programs to significantly reduce the threat to these resources. Also, proper implementation of the proposed action would not negatively impact any threatened or endangered species located on RRAD. Likewise, implementation of the plan should not impact hunting opportunities at the installation.

The IIPMP contains additional criteria to help reduce negative impacts to humans and employees at RRAD. The United States Army Health Clinic and Respiratory Protection

Program monitor the health and safety of RRAD employees. The proposed plan includes a safety plan that includes telephone numbers and addresses for emergency treatment and poison control centers for individuals exposed to chemicals. Copies of MSDS are maintained in the pest control facility and are available to all RRAD employees. The RRAD also provides an updated spill contingency plan that is kept on file at the pest control facility.

5.3.2 No Action

The no action alternative would be less effective than the proposed action since it would emphasize reaction to problems rather than a proactive approach to pest management. Partial implementation of the IIPMP would likely emphasize responses to current needs to support the military mission as well as site-specific responses to environmental compliance. Overall surveys and monitoring of pest concerns as well as long-term programs would be lower priority. This partial implementation approach would probably achieve compliance with laws, but it would not provide as many benefits to biological resources.

5.4 HISTORIC RESOURCES

Impacts to cultural resources are not likely to occur due to the implementation of pest management programs identified in the IIPMP. However, all field management programs should be coordinated with the base cultural resources manager to ensure that site ground disturbance impacts do not occur as a result of the IIPMP implementation. The IIPMP should identify management strategies if unanticipated cultural resource discoveries are made during implementation of the IIPMP.

5.4.1 Proposed Action

Implementation of the proposed IIPMP should have no negative affects on historic or cultural resources at RRAD. Installation Implemented Pest Management Plan projects requiring the movement of earth would be subject to NEPA review and documentation as well as coordination with SHPO whenever required.

5.4.2 No Action

Failure to implement the IIPMP would mean that existing management activities would continue on RRAD. Implementation of the no action alternative could have negative effects on historic resources at RRAD. Negative impacts to historical resources could occur if certain pest management plans were not implemented. For example, pest species that cause direct damage to historic properties, such as termites, would not be controlled under this alternative. Similar to the proposed action alternative, IIPMP measures requiring the movement of earth would be subject to NEPA review and documentation as well as coordination with SHPO whenever required.

5.5 HAZARDOUS MATERIALS

The United States Environmental Protection Agency (EPA) considers a substance hazardous if it can catch fire, react or explode when mixed with other substances, is corrosive, or is toxic. Hazardous materials are also capable of producing harmful physical or health effects. Harmful physical effects include: fire, sudden release of pressure, explosion, and other violent reactions. Harmful health effects include: acute conditions and chronic conditions. Acute health conditions develop soon after an over-exposure to hazardous materials and can include: burns, rashes, respiratory distress, convulsions, and possibly even death. Chronic health conditions develop after long term exposure to hazardous materials and can include; cancers, nervous system disorders, and damage to other organ systems.

Hazardous and toxic materials should be stored and contained in accordance with general chemical compatibility guidelines and labeled directions. All chemicals should be labeled and dated. Chemicals with similar compatibility properties should be stored together and away from incompatible groups of chemicals. Flammable materials should be stored in an approved, flammable-proof materials storage cabinet or room. Liquids should be stored in unbreakable or double-contained packaging, or the storage cabinet should have the capacity to hold the contents if the container breaks. Storage of chemicals on the floor and on shelves higher than eye level should be avoided even temporarily. Shelf assemblies should contain anti-roll lips and be firmly secured to the walls. Acids and poisons should be stored in dedicated acid or poison cabinets. Managers should look for unusual conditions in chemical storage areas such as: improper storage of chemicals, leaking or deteriorating containers, spilled chemicals, temperature extremes, low lighting levels, blocked exits, doors, or aisles, lack of security, trash accumulation, smoking, open lights, or matches, fire equipment blocked, lack of information or warning signs (“No Smoking”, “Flammable Liquids”, “Acids”, “Corrosives”, “Poisons”, “Chemical Storage”). Deficiencies with any of these conditions should be corrected immediately to prevent possible accidents.

Federal, state and local laws strictly regulate the disposal of hazardous materials. The disposal of any hazardous material in the sewer, on the ground, or in the regular trash is illegal. Hazardous waste handlers are responsible for collecting hazardous waste and preparing it for shipment to an approved hazardous waste disposal facility. Waste storage containers must be non-leaking, chemically compatible, safe, and clearly labeled with the words “Hazardous Waste” when transporting for disposal. The label must also include the complete name(s) of the container’s chemical constituents. Hazardous chemical containers should be discarded as hazardous waste when they are considered empty. Compressed gases including, non-returnable cylinders, and aerosol cans are not considered empty until they reach atmospheric pressure. Other hazardous chemical containers are considered empty when as much material as possible has been removed through ordinary means (pouring, pumping, scraping, etc.), and there is less than 3% by weight of the original contents left in the container.

5.5.1 Proposed Action

Activities relating to pest management would result in the use of hazardous materials and the generation of hazardous wastes. Potential minor spills could result due to the storage and use of

pesticides at RRAD. Compliance with management strategies presented in the IIPMP, along with existing federal, state, and Army regulations, would help minimize impacts to the environment. Management methods in the IIPMP that include chemical controls should adhere rigorously to all environmental hazards and site-specific application criteria listed on the pesticide label. Management methods should use the minimum level of pest control necessary when meeting desired objectives to reduce environmental risk and pest resistance. Accurate pesticide mixing, proper calibration of equipment, and avoidance of spills and back-siphoning are critical to proper implementation of the IIPMP. The consideration of weather, soil type, location, and timing are other factors that must be considered prior to chemical application. Proper storage of pesticides, proper disposal of pesticide containers, and maintenance of pesticide use records are also critical to a successful integrated pest management plan.

Because the regulatory status of chemicals is constantly changing, it is recommended that a periodic review of the chemical's current regulatory status be done prior to application. Likewise, the pest management plan should be reviewed and updated periodically in order to incorporate new technology, respond to pest complex changes, and avoid the development of pest resistance.

5.5.2 No Action

The alternative action offers a less comprehensive program for the control and management of pest concerns at RRAD. Failure to implement the proposed IIPMP would mean that existing management activities would continue. Some of the strategies that could reduce the frequency and intensity of spills would not be implemented. Therefore, any potentially beneficial impacts from implementation of the integrated plan would be less likely to occur. Likewise, partial implementation of the IIPMP would reduce the planning capabilities of the program and would not allow as much flexibility in choosing the most appropriate management option or combination of options that are suitable for the desired objective. Overall, chemical safety, storage, disposal, and the use of long-term pest control monitoring would be lower priority with the no action alternative.

6.0 FINDINGS AND CONCLUSIONS

Implementing the RRAD IIPMP would not constitute a major Federal action significantly affecting the quality of the environment. There would be beneficial consequences associated with this plan, such as reducing the impact to soil, water, and biological resources, thereby avoiding violations of Federal and State laws, including the Clean Water Act, NEPA and the Sikes Act. This implementation would allow the Army to manage pest concerns at RRAD in a proactive manner that meets current and future management needs.

7.0 REFERENCES

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APPENDIX A

RED RIVER ARMY DEPOT

INSTALLATION INTEGRATED PEST MANAGEMENT PLAN